AMENDMENTS TO THE CLAIMS

1. (Currently amended) A process for the separation and recovery of boron from an aqueous solution of ~~containing the same which aqueous solutions are used in~~ nuclear power plant wastewater containing non-dissociated boric acid ~~generation~~, using a five-compartment electrochemical cell comprising a first and second diluting compartment, a first and second anolyte compartment, one catholyte compartment, and one anode and two cathodes, whereby a first cation-exchange membrane separates the catholyte compartment from the first diluting compartment, a first anion-exchange membrane separates the first diluting compartment from the first anolyte compartment, a second anion-exchange membrane separates the second anolyte compartment from the second diluting compartment, a second cation-exchange membrane separates the second diluting compartment from the catholyte compartment, and an anode separates the first and second anolyte compartments, the anode being provided with a hole for the flow of anolyte between said first and second anolyte compartments, the method comprising:

feeding untreated aqueous solution to the first diluting compartment for separating strongly dissociated anions ~~in the form of~~ by electrical migration performed in ~~one diluted~~ the first diluting compartment ~~(2) of an electrochemical cell~~, wherein the first diluting compartment is filled with cation-exchange material only,[[;]] and separating dissociated cations ~~such as $^{7}Li^{+}$ in the form of~~ by ion-exchange/electrical migration in ~~the same~~ said first diluting compartment ~~above~~;

feeding the aqueous solution treated in the first diluting compartment to the second diluting compartment for separating boron ~~in the form of~~ by electrochemical/chemical dissociation, ion-exchange/adsorption, and electrical migration performed in ~~another diluted~~ said second diluting compartment, [[(5)]] wherein said second diluting compartment is filled [[by]] with anion-exchange material or a mixture of anion- and cation-exchange materials, or layers of anion- and cation-exchange materials separated from each other;

recovering the separated cations into the catholyte compartment [[(1)]] of the electrochemical cell;

recovering the separated boron into at least one of the anolyte compartments ~~(3,4)~~ of the electrochemical cell;

recirculating the anolyte in [[the]] said at least one anolyte compartment ~~(3,4);~~

recirculating the catholyte in [[the]] said catholyte compartment [[(1)]]; and

recirculating the diluted solution in ~~the diluted~~ said first and second diluting compartments ~~(2,5)~~ if necessary.

2. (Canceled)

3. (Currently amended) The process according to claim 1, wherein the first and second diluting ~~diluted~~ compartments ~~(2,5),~~ are separated from the anode by [[an]] the first and second anion-exchange membranes, respectively, ~~(AM)~~ and wherein the first and second diluting compartments are separated from ~~one of~~ the cathodes by [[a]] the first and second cation-exchange membranes, respectively ~~(CM)~~.

4. (Previously presented) The process according to claim 1, wherein DC potential is applied between the anode and the cathode.

5. (Currently amended) The process according to claim 1, wherein [[one]] the first anolyte compartment [[(3)]] is used for collecting the separated strongly dissociated anions~~, such as chloride, nitrate, and sulfate~~, and the second ~~another~~ anolyte compartment [[(4)]] is used for recovering the separated boron.

6. (Currently amended) The process according to claim 1, wherein the catholyte compartment [[(1)]] is used for collecting the separated ~~strongly~~ dissociated cations ~~such as 7Li+.~~

7. (Currently amended) The process according to claim 1, wherein [[the]] an initial anolyte is [[the]] a pure solution of boric acid, and [[the]] an initial catholyte is [[the]] a pure solution of a given dissociated cation that may be recovered, and the initial concentrations of the anolyte and catholyte are appropriately adjusted for performing the separation and recovery of boron and a ~~certain~~ given dissociated cation.

8. (Currently amended) The process according to claim 1, wherein the ion-exchange materials filled in the ~~diluted~~ diluting compartment(s) is (are) ion-exchange resins having uniform particle size and the same mean diameter of resin beads for both anion and cation resins.

9. (Currently amended) The process according to claim 1, wherein the separation of boron from strongly dissociated anions is performed before the separation of boron in the second diluting ~~a following diluted~~ compartment.

10. (Currently amended) The process according to claim 1, wherein [[the]] electrochemical dissociation of boric acid in the first ~~diluted~~ diluting compartment is reduced by controlling a [[the]] density of DC current during the separation of boron with strongly dissociated anions, the applied current density being controlled below $0.1A/dm^2$, and the electrochemical dissociation of boric acid is reduced below 15% as an [[the]] initial concentration of boron is about 2000 ppm.

11. (Currently amended) The process according to claim 1, wherein a [[the]] DC current applied to the electrochemical cell is appropriately adjusted to keep a balance among [[the]] an electrochemical dissociation of boric acid, the electrical migration of anions and water splitting for a [[the]] regeneration of ion-exchange materials.

12. (Currently amended) The process according to claim 1, wherein the separation and recovery of boron can be performed for an aqueous solution with a [[wide]] range of initial concentration of boron from ~~several~~ about two thousand ppm [[50]] to about twenty ~~several tens~~ ppm.

13. (Previously presented) The process according to claim 1, wherein a high efficiency of boron separation is achieved, the separation percentage of boron being over 95%.

14. (Previously presented) The process according to claim 1, wherein a high concentrating limit is achieved for boron recovery, the concentration of boron in the anolyte being up to 80% of the solubility of boric acid.

15. (Currently amended) The process according to claim 1, wherein the separation and recovery of boron and a given cation ~~like lithium such as $^{7}Li^{+}$~~ may be performed at the same time.

16. (Previously presented) The process according to claim 1, wherein the treatment of the aqueous solution is performed in a recirculating model, a follow-through model or a partial-recirculating model.

17. (New) The process according to claim 1, wherein the dissociated cations are $^{7}Li^{+}$-ions.

18. (New) The process accoeding to claim 5, wherein the dissociated anions are selected from the group consisting of chloride, nitrate and sulfate-ions.